

U.S. Patent Application Serial No. 09/830,232
Reply to Office Action dated January 25, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1-8. (Canceled)

9. (New) A device for the reception of a multicarrier signal, formed by a set of carrier frequencies, said device implementing at least two reception paths supplied with data flows, each conveying a same source symbol ($x_k(n)$), each of said reception paths comprising estimation means associating with each source symbol received, an estimated path value and a corresponding confidence information element, wherein said source symbols are conveyed by a subset of said set of carrier frequencies, said device comprising means for combination of said estimated path values delivering:

an adapted estimated value, obtained from said estimated path values, in taking account of said path confidence information to weight said estimated path values; and

an adapted confidence information element, and

weighted-input decoding means supplied by said adapted estimated value, wherein said means for the combination computes said adapted estimated value as follows:

$$\hat{x}_{Adap,n} = \left(\sum_{i=1}^N cnfd_{i,n} \times \hat{x}_{i,n} \right) / \left(\sum_{i=1}^N cnfd_{i,n} \right)$$

where:

$\hat{x}_{i,n}$ is the estimated value of the symbol received on the path i ;

$cnfd_{i,n}$ is the corresponding path confidence information element; and

N is the number of paths.

10. (New) A device for the reception of a multicarrier signal, formed by a set of carrier frequencies, said device implementing at least two reception paths supplied with data flows, each conveying a same source symbol ($x_k(n)$), each of said reception paths comprising estimation

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means associating with each source symbol received, an estimated path value and a corresponding confidence information element,

said source symbols being conveyed by a subset of said set of carrier frequencies,

said device comprising means for combination of said estimated path values delivering:

an adapted estimated value, obtained from said estimated path values, in taking account of said path confidence information to weight said estimated path values;

an adapted confidence information element, as a sum of said path confidence information elements, and

weighted-input decoding means supplied by said adapted estimated value, wherein said means for combination computes said adapted confidence information element as follows:

$$cnfd_{Adap,n} = \sum_{i=1}^N cnfd_{i,n}$$

where:

$cnfd_{i,n}$ is the confidence information element associated with the path i ; and

N is the number of paths.

11. (New) A device for reception according to claim 9, wherein the reception device implements at least two antennas supplying distinct reception paths.

12. (New) A device for reception according to claim 9, wherein each of said reception paths comprises a first module shaping and demodulating the received signal and a second module determining said estimated path values and said corresponding confidence information elements, said device further comprising a single module supplied by said second module of each reception path, and providing for said means for combination said adapted estimated values and said weighted-input decoding means supplied with said adapted estimated value.

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13. (New) A device for reception according to claim 10, wherein the reception device implements at least two antennas supplying distinct reception paths.

14. (New) A device for reception according to claim 10, wherein each of said reception paths comprises a first module shaping and demodulating the received signal and a second module determining said estimated path values and said corresponding confidence information elements, said device further comprising a single module supplied by said second module of each reception path, and providing for said means for combination delivering said adapted estimated values and said weighted-input decoding means supplied with said adapted estimated value.

15. (New) A method for the reception of a multicarrier signal, former by a set of carrier frequencies transmitted simultaneously, implementing at least two reception paths supplied with data flows, each conveying the same source symbols, each of said paths implementing a step of estimation of the transmission channel associating, with each source symbol received, an estimated path value and a corresponding path confidence information element a source symbol being conveyed by a subset of said set of carrier frequencies, comprising:

a combination step delivering:

an adapted estimated value, obtained from said estimated path values in taking account of said path confidence information to weight said estimated path values; and

an adapted confidence information element with each of said adapted estimated values, wherein said adapted estimated value is computed as follows:

$$\hat{x}_{Adap,n} = \left(\sum_{i=1}^N cnfd_{i,n} \times \hat{x}_{i,n} \right) / \left(\sum_{i=1}^N cnfd_{i,n} \right)$$

where:

$\hat{x}_{i,n}$ is the estimated value of the symbol received on the path i ,

$cnfd_{i,n}$ is the corresponding path confidence information element, and

N is the number of paths; and

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a step of weighted-input decoding, supplied by said adapted estimated values.

16. (New) A method for the reception of a multicarrier signal, former by a set of carrier frequencies transmitted simultaneously, implementing at least two reception paths supplied with data flows, each conveying the same source symbols, each of said paths implementing a step of estimation of the transmission channel associating, with each source symbol received, an estimated path value and a corresponding path confidence information element, a source symbol being conveyed by a subset of said set of carrier frequencies, said method comprising:

combining and delivering:

an adapted estimated value, obtained from said estimated path values in taking account of said path confidence information to weight said estimated path values, and

an adapted confidence information element with each of said adapted estimated values, wherein said adapted confidence information element is computed as follows:

$$cnfd_{Adap,n} = \sum_{i=1}^N cnfd_{i,n}$$

where:

$cnfd_{i,n}$ is the confidence information element associated with the path i ,

and

N is the number of paths; and

weighted-input decoding, supplied by said adapted estimated values.